

residing in rural areas, without administrative or judicial delays.” Another statement of this objective is to promote *entrepreneurship*, (defined earlier as the process of creating economic value through building a new business) and to limit *speculation*, the act of buying spectrum in the hopes that future market conditions will increase the price of the spectrum beyond current valuations without an intent to actually provide new services. However, in an attempt to promote diversity of ownership through the use of installment payments, the Commission’s C-block rules appear to have had the unintentional effect of promoting speculation at the expense of entrepreneurship. To the extent that speculators do not buildout new systems or default on their installment payments, and their licenses need to be reauctioned, both consumers and legitimate entrepreneurs loose out from the speculation. Therefore, speculation could substantially delay the advent of PCS implementation and the increased competition in CMRS that only built systems can generate.

Another Congressional objective, “recovery for the public of a portion of the value of the public spectrum resource,” is also clearly hindered if speculators default on their installment payments and the licenses have to be reauctioned. Any delays in recovery of money from spectrum are contrary to this objective.

2. Bidding Credits Tend to Allocate Licenses in an Economically Inefficient Manner

One of the Congressional objectives, to use spectrum efficiently, implies that spectrum should be allocated to the entity that values it most highly. It is easy to demonstrate that bidding credits lead to violations of this objective, particularly when entities in the same auction block have different bidding credit and installment payment options. To take a simple example, suppose Bidder A values a license at \$99 and Bidder B values it at \$80. In a normal auction, Bidder A wins the license by paying up to \$99 dollars and the economically efficient outcome is achieved. If Bidder B has a 25 percent bidding credit, Bidder B will win the

auction by bidding \$100 and only paying \$75. This clearly violates the economic efficiency objective. *If bidding credits are large enough they can effectively shut non-credited bidders out of an auction, excluding them from winning any licenses because of their unwillingness to pay a premium over the economic price.*

The credits also appear to discourage non-credited companies from even participating in the auction. In the C-block auction, only two non-credited companies even entered the auction — and neither is still an active participant. Additionally, of the 36 bidders who made up front payments of three million dollars or more, all 36 were eligible for the bidding credits and the most generous installment plan.

3. Contrary to the “Efficient Use” and the “Development and Rapid Deployment” Objectives, Installment Payments Tend to Allocate Licenses to Those Entities Who Have the Highest Costs of Capital and Are Least Economically Viable

Installment payments benefit eligible bidders *vis-à-vis* non-eligible bidders in a similar fashion to bidding credits. However, installment payments also have a differential impact on bidders. The firms with the highest cost of capital (the riskiest firms) benefit the most from installment payments with federally subsidized low interest rates. Hence, installment payments tend to raise the gross bid price for spectrum toward the net present value of the firms with the highest cost of capital. Thus, installment terms favor those bidders who benefit most from the subsidized payment terms *vis-à-vis* bidders who would realize benefit from the intrinsic value of the licenses. This facet of installment payments not only hinders the economic efficiency objective: it also increases the chance that the least economically viable firms will win spectrum licenses. Because these financially weak companies will have a difficult time raising the money to build out the PCS systems, this result harms the development and rapid deployment objective as well.

Another simple example will help to illustrate these points. Assume that firms X and Y qualify for the most advantageous form of installment payments and firm Z is not eligible for any bidding preferences.²² Firm X values a license at \$500 million and can raise capital by selling investment grade bonds at 8 percent interest. Firm Y values the license at only \$400 million according to its business plan and has a much higher cost of capital of around 18 percent. Firm Z values the license at \$550 million and as a blue chip firm has a cost of capital of 7 percent. Under the installment plan, firm Y would bid up to \$725 million (or \$967 million including the bidding credit) for the license but firm X would only bid up to \$557 million (or \$743 million including the bidding credit) and firm Z up to \$550 million. (See Appendix I for a summary of this calculation)

In this example, the license has not been issued to the entity valuing the spectrum the most but has been awarded to a riskier venture, which values the federally subsidized loan program the most. Firm Z would have been willing to pay \$550 million in cash and was in the strongest financial position to build out a PCS system but finished with the lowest gross bid. After the auction, Firm Y will be required to borrow substantial amounts of money (at an 18 percent cost of capital) to build out its system. Firm Y's difficulties in raising private capital for a system buildout are compounded by the fact that the high gross bid prices will make it very difficult to resell the license. It is unlikely that the license could be sold at its gross bid price (which the FCC requires under its unjust enrichment rules) even if the buyer was eligible for the installment payment and bidding credits. Without a viable source of collateral (a license that can easily be resold), it will be very difficult for Firm Y to raise enough money to build and operate its system. Thus, assuming different firms place approximately the same cash

²² Ten percent down with interest only payments for the first six years and principal and interest for the next 4 years at the ten-year T-Bond rate.

value on a given spectrum license, installment payments will allocate the licenses to the riskiest and least financially viable bidder.

4. Some C-Block Bidders with Outside Investors Have an Economic Incentive to Win Licenses at Any Price Even If They Ultimately Default

The financial organization of some of the bidding entities suggests that the organizers are fully cognizant of the incentive properties of the C-block auction. For example, one general partner (GP) in limited partnership (LP) which is bidding in the C-block has raised approximately \$65 million from investors under the following terms:²³

- The agent of the GP receives 10 percent of the capital raised (\$6.5 million) as a “fee” for filing and preparing the application for competing in the auction.
- If the GP’s agent wins at least one license (regardless of price) the agent receives another 10 percent of the money raised (\$6.5 million) as an additional filing fee.
- After the down payment on a winning bid GP immediately receive one percent of the gross assets as a management fee. Because the assets are based mostly on the purchase price of the spectrum the bidder has little incentive to keep the bids low.
- According to the terms in the limited partnership prospectus, the GP receive an additional one percent of gross assets in monthly installments, beginning in January 1997.
- The GP is also entitled to salaries and expenses.

Based on the terms of the GP’s compensation, as set forth above, if the bidding agent of the GP bids to maximize the short-term profits of the GP it would make gross bids of

²³ Based on an analysis of PCS 2000, L.P., Form 203-D, Pennsylvania Securities Commission, Memorandum dated January 26, 1995, p. 18 and *Agreement of Limited Partnership of PCS 2000, L.P.* , p.8

\$420 million²⁴ and if the GP makes the down payments and two quarterly interest payments, the GP and its agents are entitled to approximately \$17 million plus salaries and expenses.²⁵ The GP can thus extract more than \$17 of the \$65 million even if the operation goes bankrupt in the third quarter of operation. The government would keep the down payment but would be forced to reacquire the license. Such a scenario clearly contravenes all four of the Congressional objectives.

Economic theory predicts that, as profit maximizers, bidders who qualify for bidding credits and installment payments and partner with outside investors will seek to extract from these investors the "discount value" they bring to the auction from the FCC's preferences. Scenarios such as the one described above are thus not surprising.

G. Policy Recommendations for the D, E, and F-Blocks

The Commission's good faith attempt to follow Congressional guidelines and ensure that spectrum is widely distributed among different types of businesses including small businesses and businesses owned by women and minorities is commendable. However, the most economically efficient way to promote this objective is to set aside certain blocks, such as the C and F-blocks for businesses that qualify under maximum revenue and net worth thresholds. Adding installment payments and bidding credits to these set aside blocks hinders the economic efficiency objective and does not appear to allow the eligible bidders to purchase the spectrum at below market rates. As long as there are enough entities with credits or

²⁴ Based on the limited partnership's initial capitalization of \$65 million it could afford to make gross bids of \$420 million (\$300 million net of bid credits). It could then make the \$30 million down payment and two quarterly interest payments of \$4.1 million each (\$270 million at an interest rate of 6 percent for 6 months). The partnership would still have almost \$27 million left which could be used to pay the \$17 million plus the fees and expenses of the GP. This analysis assumes the FCC does not impose any penalties on the partnership for improper bidding.

²⁵ The GPs receive \$13 million from winning the licensee, \$4.2 million from the management fee.

installment payments to make a liquid market by themselves, bidders with preferences would bid through their preferences in non-set aside blocks such as the D and E-blocks as well.

Although the FCC has correctly acknowledged that it is not capable of determining when auctions have entered the realm of speculation and are no longer being based on rational economic pricing,²⁶ the Commission can and should establish rules which promote rational bidding under "the firm foundation theory of value," and which discourage the moral hazard and adverse selection of "the castle-in-the-sky" type of speculative bidders. The best way to do this is to make bidders experience the full risk of their bids by eliminating installment payments in the F-block. At a minimum, the installment payments should be restructured to increase the down payment, reduce the principal holiday, and increase interest rates toward market levels.²⁷ Because bidding credits tend to shut out non-qualifying bidders, the size of the bidding credits should be reduced, if not eliminated altogether from the F-block.

Whatever rules the FCC implements in connection with the F-block, the commission should refrain from implementing any bidding preferences in the D and E-blocks. Allowing bidders to use installment payments and bidding credits in the D and E-block auctions is inconsistent with the statutory goals of efficient use, deployment and rapid development, and recovery for the public of value from the use of spectrum. If bidding credits and installment payments are added to the D and E-blocks, it will serve to exclude many of the bidders who value the licenses most highly and tend to allocate licenses to bidders with the highest costs of

²⁶ As reported in *Communications Daily*, April 2, 1996, Wireless Bureau Chief Michele Farquhar at a Bear Stearns investment conference explained, "We believe that auctions allow the market to determine prices...That is one of the key advantages of auctions. What is overvalued for one party may be inexpensive for another. We are not in a position to determine whether spectrum is over or undervalued and we will not stop the bidding because spectrum is supposedly overpriced."

²⁷ For example the Small Business Administration guarantees private sector loans to small businesses. Most such loans are outstanding for seven to ten years with an interest rate set a prime plus two or three points. See Institutional Investor's *Bond Week*, March 4, 1996, and Nancy Seigle "SBA funds couple's bid for famous name," *Burlington County Times*, January 29, 1996.

capital. Appendix I shows that installment payments alone could increase an eligible entity's willingness to bid by more than 1.8 times its "cash" bid value (25 percent bidding credits increase this multiple to 2.4 times), dramatically distorting the auction results.²⁸

Based on the results of the C-block auction, this Commission should avoid promoting speculation and moral hazard and refrain from implementing any bidding credits or installment payments in the D and E-block auctions. Otherwise, those entities who are least likely to buildout systems and provide service to the public will win licenses in these auctions.

²⁸ Assuming an 18 percent cost of capital.

Appendix I
Hypothetical Gross Bid Values and the Cost of Capital
with Installment Payments
(in Dollars)

Firm	X	Y	Z
Final Gross Bid Value (with 25% bidding credit)	\$557 (\$743)	\$725 (\$967)	\$550
Business Plan Value of License	\$500	\$400	\$550
Cost of Capital/Discount Rate	8%	18%	7%
10 Year T-Bond Rate	6.1%	6.1%	6.1%
Down Payment²⁹	\$56	\$73	\$550
Payment Year 1 (Interest only)	\$31	\$40	\$0
Payment Year 2 (Interest only)	\$31	\$40	\$0
Payment Year 3 (Interest only)	\$31	\$40	\$0
Payment Year 4 (Interest only)	\$31	\$40	\$0
Payment Year 5 (Interest only)	\$31	\$40	\$0
Payment Year 6 (Interest only)	\$31	\$40	\$0
Payment Year 7 (Principal and Interest)	\$145	\$189	\$0
Payment Year 8 (Principal and Interest)	\$145	\$189	\$0
Payment Year 9 (Principal and Interest)	\$145	\$189	\$0
Payment Year 10 (Principal and Interest)	\$145	\$189	\$0
Net Present Value Of Payments	\$500	\$400	\$550

²⁹ Down payment is 10% of final gross bid value without bidding credits.

Note: all payments are in nominal dollars and are made at the end of the year.

Appendix II

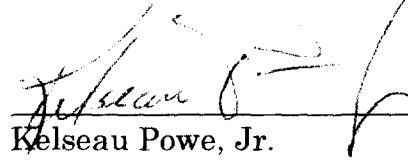
Qualifications and Biography

Robert G. Harris is an Associate Professor in the Walter A. Haas School of Business, University of California, Berkeley, and a Principal in the Law and Economics Consulting Group. He earned a Doctor of Philosophy degree in Economics from the University of California, Berkeley. At Berkeley, he teaches undergraduate, MBA and Ph.D. courses in Business & Public Policy; Economics for Managerial Decisions; Antitrust and Economic Regulation; and Telecommunications Economics, Policies and Strategies (<http://haas.berkeley.edu/~wba212/>). He has published several dozen articles and papers analyzing the effects of public policies on industry performance in telecommunications industries. He is Co-Director of the Consortium for Research in Telecommunications Policy, a collaborative program of the University of California at Berkeley, the University of Chicago, the University of Michigan and Northwestern University.

He has testified before committees of the U.S. Senate and the U.S. House of Representatives on antitrust, transportation and telecommunications legislation; to the Federal Communications Commission on spectrum auction rules, transfer of cellular licenses, price cap regulation, deployment of broadband networks, dominant carrier regulation and cable rate regulation; to the public utility commissions of fourteen states on rate design, price cap regulation and local competition policy; to the Canadian Radio-Television and Telecommunications Commission and the Mexican Secretariat of Communications and Transportation on interconnection and access pricing; and to numerous U.S. District Courts in antitrust, intellectual property and other business litigation. He has served as a consultant to the U.S. General Accounting Office, U.S. Office of Technology Assessment, U.S. Department of Justice, U.S. Department of Transportation, Interstate Commerce Commission, California Attorney General and California Department of Consumer Affairs. He has also consulted to numerous telecommunications carriers and equipment manufacturers.

CERTIFICATE OF SERVICE

I, Kelseau Powe, Jr., do hereby certify that on this 15th day of April, 1996, I have caused a copy of the foregoing **U S WEST, INC. COMMENTS** to be served via hand-delivery, upon the persons listed on the attached service list.


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